



## A SCIENTIFIC REVIEW ON NASYA KARMA IN AYURVEDIC PANCHKARMA WITH REFERENCE TO ITS PHARMACODYNAMIC ACTION

Dr. Vaishali R. Chaudhari<sup>1\*</sup>, Dr. Pranesh Gaikwad<sup>2</sup>, Dr. Mamta M. Nakade<sup>3</sup>, Dr. Yogesh B. Shinde<sup>4</sup> and Dr. Snehalata S. Pawar<sup>5</sup>

<sup>1</sup>Associate Professor and Ph.D. Scholar, Department of Panchakarma, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

<sup>2</sup>Associate Professor and Ph.D. Scholar, Department of Panchakarma, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

<sup>3</sup>Professor, Department of Panchakarma, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

<sup>4</sup>Associate Professor, Department of Swasthavritta and Yoga, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

<sup>5</sup>Assistant Professor, Department of Panchakarma, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

### Corresponding Author: Dr. Vaishali R. Chaudhari

Associate Professor and Ph.D. Scholar, Department of Panchakarma, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to Be University, (DPU), Pimpri, Pune 411018, Maharashtra, India.

Article Received on 16/12/2021

Article Revised on 06/01/2022

Article Accepted on 26/01/2022

### ABSTRACT

Nose is organ which is anatomically connected with cranial cavity and other organs like eyes, ears, pharynx ultimately it is considered as a gateway to head. In context of Ayurveda, the word 'Nasya' suggests the nasal route for administration of various drugs. Nasya procedure is mentioned as one of the Panchakarma procedures, which signify the importance of Nasya as Shodhana Karma (Purification procedure) especially for Urdhva Jatrugata Vikara (disease which affect the body above clavicle). There are different types of Nasya, depending upon Duration of Nasya, drug and method of Nasya and the various conditions in which Nasya is described by Acharya Sushruta, Charak and Vagabhata. According to Charaka Samhita, the drug administered through the nose enters in the Uttamanga and eliminates the morbid doshas residing at the Urdhwang. (Head region). The mode of action of Nasya should be understood in accordance with its drug content and type. As it is one of the non-invasive method methods of Nasya or advanced methods for trans nasal drug administration can be developed integrative approach. According to Ayurveda Nasya principally acts on Shira i.e., Central Nervous System and upper part of the body especially Head, Neck, Face, Ears, ENT, Shoulders etc. The mode of action of Nasya is said to be through the Marma Points which correlates with functions of Pituitary Gland, Thyroid Gland and other Neurochemical pathways etc. The understanding of Pharmacodynamic action of Nasya not only validates scientific foundation of Principles and Practices of Ayurvedic Panchakarma and but also facilitate and foster the Clinical Execution of Nasya Karma in Disease Prevention, Cure and in Health Promotion.

**KEYWORDS:** A Scientific Review, Nasya, Ayurvedic Panchakarma, Pharmacodynamic Action.

### NEED OF STUDY / BACKGROUND

Nasya is a special therapy in which the diverse forms of drugs are administered through the Nasa i.e., Nostrils. In context of Ayurveda, the word 'Nasya' recommends the nasal route for administration of various drugs. As per Acharya Sushruta, administration of medicine or medicated oils (Tail, Ghrita) through the nose is known as Nasya.<sup>[1]</sup> Nose is organ which anatomically connected with cranial cavity and other organs like eyes, ears, pharynx etc. So, the administered drug through this route can work as medicament for disorders affecting all these related structures. As per Acharya Sushruta,

administration of medicine or medicated oils through the nose is known as Nasya (Su. Chi. 40/21-29). Nasya therapy by its specific action on Urdhvajatru (region above the neck or Shiro Pradesh) soothes Vata as well as acts as Rasayan therapy to prevent reversions.<sup>[2]</sup> According to Acharya Sushruta Samhita the various synonyms of Nasya are-Shir Virechana, Shirovireka and Murdha Virechana etc.

Shir Virechana or Murdha Virechana itself represents the removal of morbid Dasha particularly from the Shira (Head) or parts situated above the clavicle. The verdict

"Nastah Pracchardana" was applied to Nasya which denotes Shodhana (purification) by Nasya.<sup>[3]</sup> Nasya is stated as one of the Panchakarma procedures, which signify the importance of Nasya as Shodhana Karma (Purification procedure) especially for Urdhva Jatrugata Vikara (disease which affect the body above clavicle). According to Acharya Charaka Nasa is the doorway (gateway) of Shiras. The drug administered through nose as Nasya spreads to the brain and eliminates only the morbid doshas accountable for producing the disease.<sup>[4]</sup>

### Review of literature

In Sanskrit language, each word is derived from a specific dhatu and each dhatu bears an inherent meaning which is the crux of the word. The origin of the word Nasya is from "Nasa" dhatu. It bears the sense of Gati – motion. Vyapti bears the meaning pervasion. Here, the Nasa dhatu is inferred in sense of nose. According to Vachaspathyam word "Nasata" means beneficial for nose. In Ashtang Sangraha it is clarified that Nasa being the entrance to shira, (head). *Nasya karma* is therapeutic procedures of the *pancha karma*, wherein the drug is administered through the nasal route to treat various diseases.

### Classification of Nasya<sup>[5]</sup>

All the Acharya have been classified Nasya karma in diverse ways, out of which some of them are common having different names.

### Acharya Charaka has classified according to methods of administration and action also.

- 1) Navana Nasya (Inunction)
- 2) Avapidana Nasya (Nasal drop)
- 3) Dhmapana Nasya (Pradhamana)
- 4) Dhooma Nasya (Inhalation)
- 5) Pratimarsha Nasya (Nasal drop)

### Types of Navana Nasya

- a) Snehana (oleation)
- b) Shodhana (Elimination)

### Types of Avapidana Nasya

- a) Shodhan (Elimination)
- b) Stambhana (Astringent)

### Dhooma Nasya

- a) Prayogika
- b) Snehika
- c) Vairechanik

### Types of Pratimarsha Nasya (Nasal drop)

According to the type of action of the medicine used for Nasya Karma as under.

- 1) Rechana
- 2) Tarpan (Nutritive)
- 3) Shamans (Sedative)

### According to the Sushrut Samhita, Nasya is divided into two types<sup>[6]</sup>

- a. Nasya
- b. Shiroveirechan
- c. Pratimarsha
- d. Avapidak
- e. Pradhamana

### Course of the Nasya karma:<sup>[7]</sup>

Nasya karma may be completed successively for seven days which is the maximum period according to Acharya Vagabhata. According to Acharya Sushruta, Nasya may be given the interval of 1 day, 2-day, 7 day and 22 days depending upon the condition of the patient and the disease conditions. If the patient is suffering from extreme vitiation of Vata then Nasya may be performed twice a day. i.e., in the morning and evening according to Acharya Sushruta.

Acharya Charak has not mentioned duration of the Nasya therapy. He had stated that Nasya therapy may be given according to the severity of disease. Vrudha Vagabhata in Ashtanga Samgraha also suggested the use of the Nasya on 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> day or till the patient show the symptoms of Samyak yoga. According Ashtang Hrudaya and Sushrut Samhita the various timings of Nasya administrations are as follows:<sup>[8]</sup>

1. Talapothitha (after wake up from Sleeping)
2. Prakshalikadanta (After tooth wash)
3. Gruhanirgachhatah (Before living home)
4. Vyayampachhat (After exercise)
5. Vyayampachhat (After sexual act)
6. Adhwaparishrantkal (After heavy and tired work)
7. Mutravisarjan (After Urination)
8. Malvisarjan (After defecation)
9. Kawalgrahan (after gargling)
10. Anjanpaschhat (after collyrium)
11. Bhojanpaschhat (After meal)
12. Vamanpaschhat (After Vomiting / Emesis procedure)
13. Diwaswapa (after wake from sleep in day time)
14. Sayankal (in the evening)
15. Shirobhyanga (after head massage)

### Mode of Action of Nasya Karma

In Ayurvedic classics, the mode of action of Nasya karma is explained indirectly. According to Charaka Samhita, the drug administered through the nose enters in the Uttamanga and eliminates the morbid doshas residing there. (Ch. Si. 2/22). According to Ashtanga Samgraha, Nose is the doorway to sheera(head), the drug administered through nose directly reach to the Sheera (head). The drug introduced through nose reaches the Shringataka Marma of Head (Sheera), which is a sira Marma and formed by the siras of nose, eyes, kantha and shrotra.

This drug spreads by the same route. Scratches the morbid Doshas of Urdhvajatru and extracts them from the Uttamanga. Indu, the commentator of Ashtanga

Sangraha, opined that Shringataka is the inner side of middle part of head i.e., "Shiraso Antar Madhyam".<sup>[9]</sup> *Shringataka Marma* helps in integration and transference of *Nasya* drug in local as well as general circulation. *Acharya Charaka* says the *sneha pradhana navana* drug (lipophilic drug), gets absorbed in the *Shringataka* region.<sup>[10]</sup>

In this context *Acharya Sushruta*, has clarified that *Shringataka Marma* is a *Sira Marma* formed by the union of *Siras* (blood vessels) supplying to nose, ear, eye and tongue. Thus, we can say that drug administered through *Nasya* may enter the above *sira* and purifies them. (Su. Sha. 6/27). All ancient *Acharyas* have said considered *Nasa* as the gate way of *Sheera*. It does not mean that any channel directly connects brain and nose, but it may be suggestive of any connection through blood vessels, lymphatics and nerves. Medicine given through nostrils travels the entire passage and reaches the cribriform plate, which is porous in nature.

## DISCUSSION

The mode of action of *Nasya* should be understood in accordance with its drug content and type. As the nasal drug route is very hopeful in nature, in future it is imperious to say that novel methods of *Nasya* or advanced methods for trans nasal drug administration can be developed integrative approach.

**Pharmacokinetic of *Nasya*** - Absorption, circulation and metabolism of *Nasya* drugs explore the local and systemic effects of *Nasya karma*. The olfactory epithelium is a gateway for substances entering the central nervous system (CNS) and the peripheral circulation. The neural connections between the nasal mucosa and the brain provide a unique pathway for the non-invasive delivery of therapeutic agents to the CNS.<sup>[11]</sup> The transportation of drugs across the nasal membrane and into the bloodstream may contain either passive diffusion of drug molecules through the apertures in the nasal mucosa or some form of non-passive transport.<sup>[12]</sup> According to modern science, the olfactory area is a place in the human body where the direct contact between the outer surface and central nervous system. Intranasal administration of any drugs may quickly attain therapeutic brain and spinal cord (CNS) drug concentrations. If the nasally administered medication contacts the olfactory mucosa, there is good evidence that suggests molecule carriage can occur directly across this tissue and into the cerebral spinal fluid.<sup>[13,14]</sup> Thus to understand the action of *Nasya* drug on central nervous system it is necessary to know the probable pathways of act of *Nasya* medicines. *Acharya Sushruta* also aware of connection between nose and subarachnoid space containing Cerebro Spinal Fluid (CSF). In *Sushrut Samhita*, '*mastulungagam*' (leakage of CSF through nose) is symptom mentioned in *Atiyoga* (excess activity) of *Virechana Nasya*. *Acharya Charaka* might know the concept of trans-neuronal and para-neuronal path of drug delivery from nose to brain

therefore he has given example of *munja-ishika*. The *munja* structure can be correlated with olfactory bulb and the *ishika* for the numerous neurons join to form the olfactory tract.<sup>[15]</sup>

According to *Ayurveda Nasya* principally acts on *Shira* i.e. Central Nervous System and upper part of the body especially Head, Neck, Face, Ears, ENT, Shoulders etc. The mode of action of *Nasya* is said to be through the *Marma Points* which correlates with functions of Pituitary Gland, Thyroid Gland and other Neurochemical pathways etc.

The understanding of Pharmacodynamic action of *Nasya* not only validates scientific foundation of Principles and Practices of *Ayurvedic Panchakarma* and but also facilitate and foster the Clinical Execution of *Nasya Karma* in Disease Prevention, Cure and in Health Promotion.

## CONCLUSION

Intranasal distribution of any drug through the technique like *Nasya* is one of the *Panchakarma* method reducing systemic exposure of drug and it eventually decreases the systemic side effects., further it would directly act on central nervous system as well as to break the pathology of any disease.

*Nasya* is the non-invasiveness therapy. It is observed in many studies that the intranasal administration of a drugs i.e., *Nasya* according to *Ayurveda* is an effective way for systemic availability of drugs and through nasal route may have prolonged efficacy comparison to oral route in many diseases as described in *Ayurveda*.

According to *Ayurveda Nasya* principally acts on *Shira* i.e., Central Nervous System and upper part of the body especially Head, Neck, Face, Ears, ENT, Shoulders etc.

The mode of action of *Nasya* is said to be through the *Marma Points* which correlates with functions of Pituitary Gland, Thyroid Gland and other Neurochemical pathways etc.

The understanding of Pharmacodynamic action of *Nasya* not only validates scientific foundation of Principles and Practices of *Ayurvedic Panchakarma* and but also facilitate and foster the Clinical Execution of *Nasya Karma* in Disease Prevention, Cure and in Health Promotion.

**Conflict of interest:** Nil.

**Source of support:** Nil.

## REFERENCES

1. Dr. Anant Ram Sharma, *Sushratsamhita*, Chaukhamba Surbharti prakashan Sutrasthan, 2013; 15(45): 130.

2. Shashtri A D, editor, (1<sup>st</sup> ed.). Sushrut Samhita of Sushrut, Chikitsa Sthana: Chapter 40, Verse 21. Varanasi: Chaukhambha Sanskrit Series, 2009; 74.
3. Vaidya Yadavji Trikamji Acharya, editor. Ayurveda Dipika Commentary by Chakarapanidatta of Charaka Samhita of Agnivesh, Sutra Sthana chapter 1/85. Varanasi: Chaukumba Surbharati Sansthan Reprinted, 2017; 21.
4. Pandey Ganga Sahay, editor. Pt. Kashinath Shastri Vidyotini Hindi commentator of Charaka Samhita of Agnivesa-1st volume, Sutra Sthana chapter 5verse 61-62. Varanasi: Chaukumba Bharti Academy, 2009; 123.
5. Shukla V, editor, (2nd ed.). Charaka Samhita of Charaka, Siddhisthana: Chapter 8, Verse 45. Varanasi: Chaukhambha Sanskrit Series, 2002; 943.
6. Shashtri A D, editor, (1<sup>st</sup> ed.). Sushrut Samhita of Sushrut, Chikiststhan: Chapter 40, Verse 49. Varanasi: Chaukhambha Sanskrit Series, 2009; 185.
7. Tripathi B, editor, (1st ed.). Ashtangahridaya of Vagabhata, Sootra Sthana; asyavidhim Adhyaya: Chapter 20, Verse 16. Varanasi: Chaukhambha Sanskrit Series, 2009; 245.
8. Tripathi B, editor, (1st ed.). Ashtangahridaya of Vagabhata, Sootra Sthana; asyavidhim Adhyaya: Chapter 20, Verse 16. Varanasi: Chaukhambha Sanskrit Series, 2009; 245.
9. Tripathi B, editor, (1st ed.). Ashtanga hridaya of Vagabhata, Sootra Sthana; Nasyavidhim Adhyaya: Chapter 29, Verse 2. Varanasi: Chaukhambha Sanskrit Series, 2009; 217.
10. Shukla V, editor, (2<sup>nd</sup> ed.). Charaka Samhita of Charak, Siddhi Sthana: Chapter 2, Verse 22. Varanasi: Chaukhambha Sanskrit Series, 2002.
11. Shinichiro, Hirai, et al "Absorption of drugs from the nasal mucosa of rat." International Journal of Pharmaceutics, 1981; 7(4): 317-325.
12. Sharma PK, Chaudhari P, Kolsure P, Ajab A, Varia N. Recent trends in nasal drug delivery system - an overview. 2006; 5: 4.
13. Westin, et al., Direct nose-to-brain transfer of morphine after nasal administration to rats. Pharm Res, 2006; 23(3): 565-72.
14. Zhang, John, and Mark D. Stringer. "Ophthalmic and facial veins are not valveless." Clinical & experimental ophthalmology, 2010; 38(5): 502-510.
15. Shukla V, editor, (2<sup>nd</sup> ed.). Charaka Samhita of Charak, Siddhi stana: Chapter 2, Verse 22. Varanasi: Chaukhambha Sanskrit Series, 2002; 202.